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August 19, 2013

VIA ECFS

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: American Cable Association (ACA) *Ex Parte* Filing on the Connect America Cost Model, WC Docket No. 10-90

Dear Ms. Dortch:

On August 15, 2013, Ross Lieberman of ACA, Samuel Kornstein, a consultant with CSMG, and the undersigned, Thomas Cohen of Kelley Drye & Warren LLP, had a telephone call with Steve Rosenberg and Amy Bender of the Commission's Wireline Competition Bureau ("Bureau"), to discuss the following issues related to the Connect America Cost Model ("CACM").

In participating in the Bureau's process to develop the CACM, ACA has sought to ensure that the cost model provides support efficiently. That is, support should be only the amount necessary to accomplish the Commission's objectives for the Connect America Fund ("CAF") Phase II program. To that end, ACA has been examining results produced by the current version of the CACM, including the model's unexpected provision of support in certain areas within major urban markets. Because these results seem to run counter to the objectives of the CAF, ACA asks the Bureau to analyze them to determine whether support is warranted, and if it is not warranted, the Bureau should use its authority to address this issue.

This matter also raises a larger issue about the need for the cost model to be sufficiently transparent. Unfortunately, because certain components of the underlying calculations in CACM are not accessible, ACA could not conduct the analysis it asks the Bureau to conduct in this letter, as well as other types of analysis necessary to ensure that the model achieves the objectives of the CAF. Accordingly, despite the significant measures it has already adopted, the Bureau should take additional steps to increase the model's transparency.

Below we elaborate on all of these issues.

Addressing Unexpected Results from the CACM's Provision of Support in Urban Areas

On June 25, 2013, the Bureau updated the CACM to version 3.1.4 and published two solution sets, which indicate the amount of support to be provided for an unserved area. ACA noted that in both solution sets, Washington, DC was allocated over $100,000 in annual support.[1] Additional analysis determined that in both solution sets, over $34,000 in annual support across 80 or more demand units was allocated to census blocks that are within the census block group that contains the National Mall and Memorial Parks, the White House and the U.S. Capitol (refer to Figure 1 below).[2] ACA would not have expected census blocks within this census block group to be eligible for funding under a CAF program dedicated to supporting broadband deployment in rural or high-cost areas.[3]

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1 *See Wireline Competition Bureau Announces Availability of Version 3.1.4 of the Connect America Fund Phase II Cost Model, Illustrative Results, and Updated Methodology Documentation*, WC Docket No. 10-90, Public Notice, DA 13-1439 (rel. June 25, 2013) ("Version 3.1.4 Public Notice"), including reference to the Connect America Cost Model v3.1.4 Illustrative Results (FCC DOC-321775A1), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-321775A1.xlsx. This report indicates that Solution Set 1 (report reference number 1.1) allocates $112,365 in annual support to Washington, DC, and Solution Set 2 (report reference number 2.1) allocates $108,934 in annual support to Washington D.C.

2 To identify support at the census block group level, ACA ran "Support Model Detail" reports for the two solution sets, "SS20130620CAM314ACF8UnSubCompSBI6Voice" and "SS20130620CAM314ACF9UnSubCompSBI6Voice" with the same parameters specified by the Commission in DOC-321775A1 with "Census Block Group" specified as the "Geographic Level." Using this report, ACA determined demand units eligible for support from the "Total_Demand_Units_Under_Alt_Tech_Cutoff" field, and total estimated support from the "Total_Max_Funding" field. The data from these fields was aggregated for all records for census block group #110010062021 and support levels were multiplied by 12 to convert the support amounts from monthly to annual values. ACA determined that census block group #110010062021 contains the National Mall and Memorial Parks, the White House, and the U.S. Capitol by querying the GEOID on the U.S. Census Bureau's TIGERweb site. The "Support Model Detail" report does not specify which census blocks within the census block group are receiving funds.

3 2010 census data indicates that there is a total population of 33 in the Census Block Group (#110010062021) that contains the National Mall and Memorial Parks, the White

ACA sought to determine whether this identified support was an anomaly or whether there were other census blocks groups in other urban areas that are allocated support in the solution sets published with the latest version of CACM. Specifically, ACA identified urban areas using a population density threshold from census data at the county and Core Based Statistical Area ("CBSA") levels and evaluated support amounts.

ACA's analysis indicated that over $33 million in annual support is allocated to the ten most populous CBSAs[4] in both solution sets, including over $150,000 in annual funding for census block groups in urban areas that contain the following landmarks (refer to Figure 2 below) –

- Logan Airport (Boston, MA)
- George Bush Park (Houston, TX)
- Golden Gate Park (San Francisco, CA)
- Long Beach Naval Shipyard (Los Angeles, CA)
- Arlington National Cemetery (Arlington, VA)
- Hudson River Greenway (New York, NY)

There are potentially legitimate reasons why these areas may be receiving support. In addition, ACA acknowledges that some of these supported locations may ultimately become ineligible as part of the unsubsidized competitor challenge process. However, funding for these areas was unexpected given the objectives of the CAF. Since many of the model's underlying calculations are not accessible, and it is not possible to determine the particular census blocks in census block groups receiving support, ACA was unable to identify and understand the justification for this support in these urban areas. However, ACA believes there are a number of

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House and the U.S. Capitol. Census housing statistics further indicate that there are only 8 housing units containing a population of 17. ACA is uncertain whether the White House and its residents are counted in these numbers.

[4] ACA notes that since CBSA geographic boundaries vary, and in many cases may include counties or portions of counties that are not densely populated, currently served, or easily accessible, a portion of the support that is allocated to the 10 most populous CBSAs may be allocated appropriately. An alternate analysis was performed at the county level that determined that in both solution sets over $11 million in annual support was allocated to the 100 most densely populated counties, some of which may also be allocated appropriately.

potential reasons why the model may be allocating support for locations in major urban areas, including –

- The routing algorithm "determines where demand is located and 'lays' cable along the actual roads of the service area to reach that demand point."[5] This methodology thus uses a proxy based on the locations of actual roads to determine the distance to the central office, which may incorrectly assume places like golf courses, parks, federal land, monuments, and military bases may not be used, thus overestimating required distances.

- Though locations in some areas are likely clustered together, the model sometimes assumes otherwise. Specifically, the model documentation states that "Housing Units from the Census true up process were randomly assigned to a road location and resulting linear reference. Because geocoding sometimes bunches points on the segment, the processing also included a rectification step which spreads points out along a segment if they were recognizably bunched/clustered on the segment."[6] This process of assuming certain housing units would not be clustered may be inaccurate in certain cases, potentially resulting in an overestimation of distance.

These explanations represent only a small subset of all potential explanations for the model to allocate support in urban areas. Because of these unexpected results, ACA asks that the Bureau determine whether the areas identified by ACA, as well as similarly situated areas, are receiving support in error. If they are, ACA is confident the Commission can use its authority to address this concern.[7] Moreover, as discussed below, the Commission should include more comprehensive documentation of the model and access to interim calculations related to these areas to make these cost and support estimation more transparent. This is particularly important to ensure that support recipients do not receive more money than they need to provide broadband service and support is provided to truly high-cost unserved locations.

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5 *See* Version 3.1.4 Public Notice, including reference to the Connect America Cost Model (CACM), Model Methodology, CACM version 3.1.4, Document version 3.1.4, at 39 (rev. June 21, 2013).

6 *See id*. at 13.

7 For example, if further analysis determines that an error in the routing algorithm is causing these unexpected results, the identified error may also result in inaccurate cost estimates in other locations, including non-urban areas.

CACM Documentation Issues

The issues discussed above highlight a more general need for the CACM to be even more transparent, allowing users to more easily navigate and interpret results. In previous filings, ACA indicated that the CACM is not sufficiently documented, making it difficult to comprehensively analyze the support scenarios.[8] Specifically, ACA noted that certain capabilities "should be added to the CACM to facilitate (1) more detailed analysis and (2) greater modeling transparency."[9] These recommendations included providing additional reports to show how costs are allocated across asset categories for each supported area and adding new fields in the support model detail report indicating which census blocks were previously eligible for pre-CAF universal service support and the amount (if any) of funding provided in 2011.

Since ACA made these recommendations, others have also cited a lack of sufficient documentation of the model as a significant issue. A peer review of the CACM model[10] cited the following documentation issues:

- "Model documentation is not sufficient such that all model calculations can be reproduced and verified in a straightforward manner."[11]
- "[Model documentation] was insufficient to allow one to operate or understand in straightforward fashion the key assumptions in each model calculation and report of results."[12]
- "Improved documentation will reduce the "black box" effect of the model (i.e., cost estimates that magically appear to provide quantitative answers to questions without adequate understanding of whether the set of assumptions that drive the estimates are appropriate)."[13]

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8 *See, e.g.*, American Cable Association *Ex Parte* Filing in the Virtual Workshop, WC Docket Nos. 10-90 and 05-337 (filed Jan. 11, 2013).

9 *Id.* at 1.

10 *See* Peer Review of Connect America Phase II Cost Model, David Reed and Marvin Sirbu, WC Docket No. 10-90 at 3-5 (filed Feb. 18, 2013), available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-322389A1.pdf.

11 *Id.* at 3.

12 *Id.*

13 *Id.* at 5.

The Bureau responded to issues identified in this peer review, indicating that certain "improvements to documentation are currently available and centralized in one location, on the model website"[14] and that "these improvements in documentation address [the peer review] suggestion for a comprehensive user manual, including documentation of the derivation of the values of input assumptions."[15] ACA appreciates the Bureau's efforts to improve the accessibility of existing documentation and provide additional documentation that makes the model more transparent, primarily focusing on improved documentation of various input assumptions. However, core issues related to calculation transparency and verification remain.

Further, an *ex parte* filed on behalf of the Nebraska Rural Independent Companies indicated that additional information and data describing illustrative runs "would add value and lead to more robust discussion of the FCC's efforts to establish a properly developed CAM for federal USF disbursements"[16] ACA agrees that additional documentation describing illustrative runs would be helpful, including a comparison between proposed support and historical USF support by geography.

ACA reiterates the need for additional documentation and model transparency. The following measures would improve transparency and be useful to various stakeholders in analyzing the model's results:

1. New reporting and related documentation providing data on the various calculation components would make the model more transparent and would improve a user's ability to reproduce and verify calculations (e.g., the ability to identify the drivers of the high costs calculated for specific locations within the census block group that contains the National Mall and Memorial Parks, the White House, and the U.S. Capitol). For example:

    - Providing access to the geographic coordinates of modeled locations and their central office, as well as summary reporting on locations that were

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14 Wireline Competition Bureau Response to Professors Reed and Sirbu, WC Docket No. 10-90 (July 25, 2013) at 2, available at: http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0725/DOC-322386A1.pdf.

15 *Id.* at 3.

16 *Ex Parte* Letter of the Nebraska Rural Independent Companies, WC Docket Nos. 10-90 and 05-337 at 2 (filed July 30, 2013).

randomly assigned to a road location and/or spread along a road segment in the CACM rectification process[17] would help users better assess whether modeled results appear reasonable at the census block level.

- Improving reporting and documentation that helps users better understand how costs are allocated across asset categories, including calculated asset quantities for each supported area, would facilitate analysis to identify specific cost drivers (e.g., determine from reporting whether an area is receiving support due to high underground unitized plant costs vs. high regional labor costs). This should include improved documentation and explanations of existing reporting (e.g., audit solution sets), and new summary reporting of how different asset categories and assumptions drive costs and how the investment levels translate into monthly cost estimates.

- Providing access to all interim calculations would provide more transparency in the process and would facilitate error checking. At a minimum, an example calculation for a census block or census block group showing all steps (i.e., interim calculations) would at least assist stakeholders in replicating the process in other locations. This sample should start with all input assumptions for a given location, and demonstrate how these assumptions are aggregated to estimate node and asset-level investment requirements and ultimately levelized monthly cost estimates.

2. Geographic visualizations of costs, support, and other assumptions (e.g., specific plant routes and the locations of demand units) would enable stakeholders to more easily evaluate the modeled results. Geographic representations of modeled results would be particularly helpful as part of the unserved area challenge process.

3. A comparison of proposed CAF Phase II funding with pre-CAF universal service support would help identify how CAF Phase II would redistribute support amounts, both geographically and among price cap local exchange carriers.

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[17] *See* Version 3.1.4 Public Notice, including reference to the Connect America Cost Model (CACM), Model Methodology, CACM version 3.1.4, Document version 3.1.4, at 39 (rev. June 21, 2013).

Conclusion

ACA analyses of the two solution sets published by the Bureau suggest the need for additional review of the CACM model support estimation outputs and related cost calculation methodology. The identified support for locations within urban areas raises questions regarding the specific reasons the model is estimating certain areas to be high-cost, and the identified examples should be investigated to determine if there are systematic issues with the calculation methodology. Since it is not currently possible to determine the specific cause of some of these unexpected results using existing reporting and documentation, these analyses also reiterate the need for improved model transparency.

Should you have any questions about ACA's analysis, please contact me.

Sincerely,

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cc: Carol Mattey
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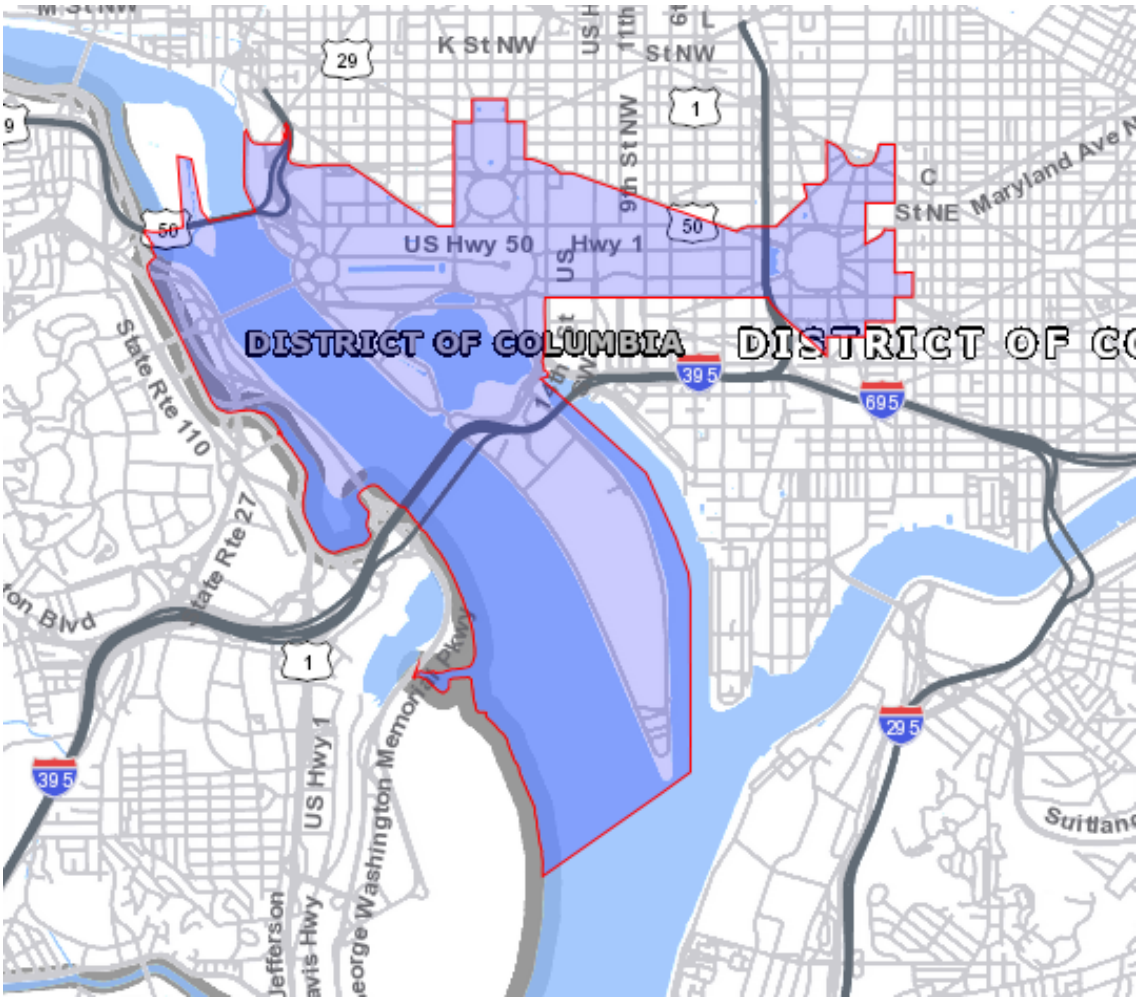
Figure 1: Census Block Group Containing the National Mall and Memorial Parks, the White House, and the U.S. Capitol (#110010062021)



Source: TIGERweb, US Census Bureau

Figure 2: Illustrative Examples of Estimated Support in Urban Areas

Region	Map	Census Block Group(s)	Landmark	Annual Support		Demand Units	
				Report 1	Report 2	Report 1	Report 2
Boston, MA		250259813002	Logan International Airport	$13k	$14k	74	74
Houston, TX		482014544001	George Bush Park	$11k	$14k	23	28
San Francisco, CA		060759803001	Golden Gate Park	$23k	$23k	32	30
Los Angeles, CA		060379800021 060379800141 060379800311 060379800331	Long Beach Naval Shipyard & Terminal Island*	$91k	$89k	235	233
New York, NY		360610167001	Hudson River Greenway & NYC Marina	$9k	$10k	11	11
Arlington, VA		510139801001	Arlington National Cemetery	$32k	$34k	75	82

* Includes multiple census block groups

Note: Reports 1 and 2 refer to the Solution Set report reference numbers 1.1 and 2.1 respectively documented in FCC DOC-321775A1 and punlished by the FCC on June 25, 2013. The methodology used to identify census block groups is described in footnote 2. Support values are rounded to the nearest $1k. Demand units represent the number of support-eligible locations.

Source: FCC, CACM, TIGERweb, US Census Bureau